# How can forestry and wood processing help deliver a Green Brexit and a more sustainable society in the UK?

**Lorna Johnson**, a Masters student at Harper Adams University, has won Confor's first Future of Forestry writing prize

Forestry has indeed profited from European standards; however, Brexit provides the UK with the opportunity to not only uphold these standards but to improve and strengthen them. Forestry is valued throughout Europe and has been affected by an array of Community Policies yet there has never been a common forest policy. In total, 90% of EU funding for forests comes from Pillar 2 of the Common Agricultural Policy (CAP); however, significant amounts of the budget are used in Pillar 1 for direct payments for farmers. Plans to reform CAP could lead to further investment in forestry.

Investing in the sector is an investment into a Green Brexit and the 25-Year Environment Plan proposed earlier this year (European Parliament, 2018). Figure 1 is an infographic designed to demonstrate that trees can contribute to some of the goals set in the Environment Plan. The value of forestry to sustainability post Brexit has already been recognised by bodies such as the Soil Association who noted that bringing trees onto farms can be a 'game-changer' for land-use policy.

Environment Secretary Michael Gove expressed his views on the opportunities Brexit could provide during his speech at UK Prosperity in March, as he said, 'Britain has the potential to be an innovator, setting new global gold standards in sustainability'. The following essay will cover just some of the reasons forestry could be valuable to the Green Brexit Michael Gove envisages. Table 1 demonstrates a few of the ways forestry is already contributing to environmental improvement.

## Value of forestry to wildlife

Worldwide, forests are home to 80% of all terrestrial species of animals, plants and insects yet tropical, temperate and boreal forests cover only 30% of the Earth's land (WWF, 2018). UK woodlands are no exception, they host fungi, hundreds of invertebrates, nesting birds and mammals. One ash tree (*Fraxinus excelsior*) supports 1058 species at some point of their life cycle and 45 depend on ash for their existence (JNCC, 2018). Most of the UK's forest estate is plantation-based; whilst they are not as ecologically rich as ancient woodlands, they provide habitats for an array of flora and fauna including protected species such as the Red squirrel, Pine Marten and Black Grouse. The plantation forest in North Wales, Coed Llandegla, provides the woodland edge favoured by the Black Grouse and has been described by the BBC as a "haven" for the birds. Increasing forest cover will support wildlife important to the British Isles for generations to come.

## Forests products as a carbon store

One of the goals set in the Environment Plan is to use resources from nature more sustainably and efficiently (UK Government, 2018). Research and innovation is

**Table 1**
**UK Woodland Ecosystem Asset Values**

| Service (£million) | 2015 |
| --- | --- |
| Biomass from timber | 6,582.9 |
| Carbon sequestration | 42,857.3 |
| Pollution removal | 24,951.3 |
| Time spent at habitat | 13,193.2 |
| Total | 87,584.7 |

*Source: Office for National Statistics*



expanding the range of sustainable products on offer from timber. Wood is one of the most versatile materials on earth. Traditional construction materials can now be replaced with engineered wood such as glue-laminated (glulam) timber, cross-laminated timber or *brettstapel*. Glulam is 20% lighter than steel but remains as structurally strong, it is also 60% lighter than concrete and sequesters 734kg of $CO_2$ for every metre cubed of the material (HESS Timber Limitless, 2018). It has successfully been used to construct numerous pieces of infrastructure across the UK such as the John Hope Gateway at the Royal Botanic Garden in Edinburgh and the visitor centre for the Savill Gardens in Windsor Great Park.

Biomass utilisation has been on an upward trajectory as the UK energy sector as a renewable, low carbon alternative to fossil fuels. A new opportunity is arising to reduce fossil fuel reliance as developments are being made in the biofuel sector. Alaska Airlines have used a blend of jet fuel and a wood-based biofuel to power some commercial flights and are now pioneering emission reductions in their aviation sector (International Timber, 2018). In Finland, UPM are utilising their own BioVerno diesel for road transport and maritime vessels, cutting emissions by 10%. UPM have also developed the biocomponent BioVern which can be transformed into renewable resins to create bioplastics for the packaging industry. Currently, UK biofuels are contributing just 4% of total road and non-road mobile machinery fuel. Investing in the wood processing industry could mean reducing the UK's reliance on plastics and fossil fuels, meeting goals set in the Environment plan and simultaneously contributing to carbon and waste reduction targets (DT, 2018).

## The value of forestry to air quality

A variety of air pollutants such as $SO_2$, $NO_2$, $CO_2$, Volatile Organic Compounds (VOC), such as Methane and Ammonia ($NH_3$) are affecting the quality of ambient air in the UK and contributing to the greenhouse gas effect. Trees can uptake, transport, assimilate and decompose countless gaseous or particulate pollutants. Carbon is not simply stored in living trees but in deadwood, for-
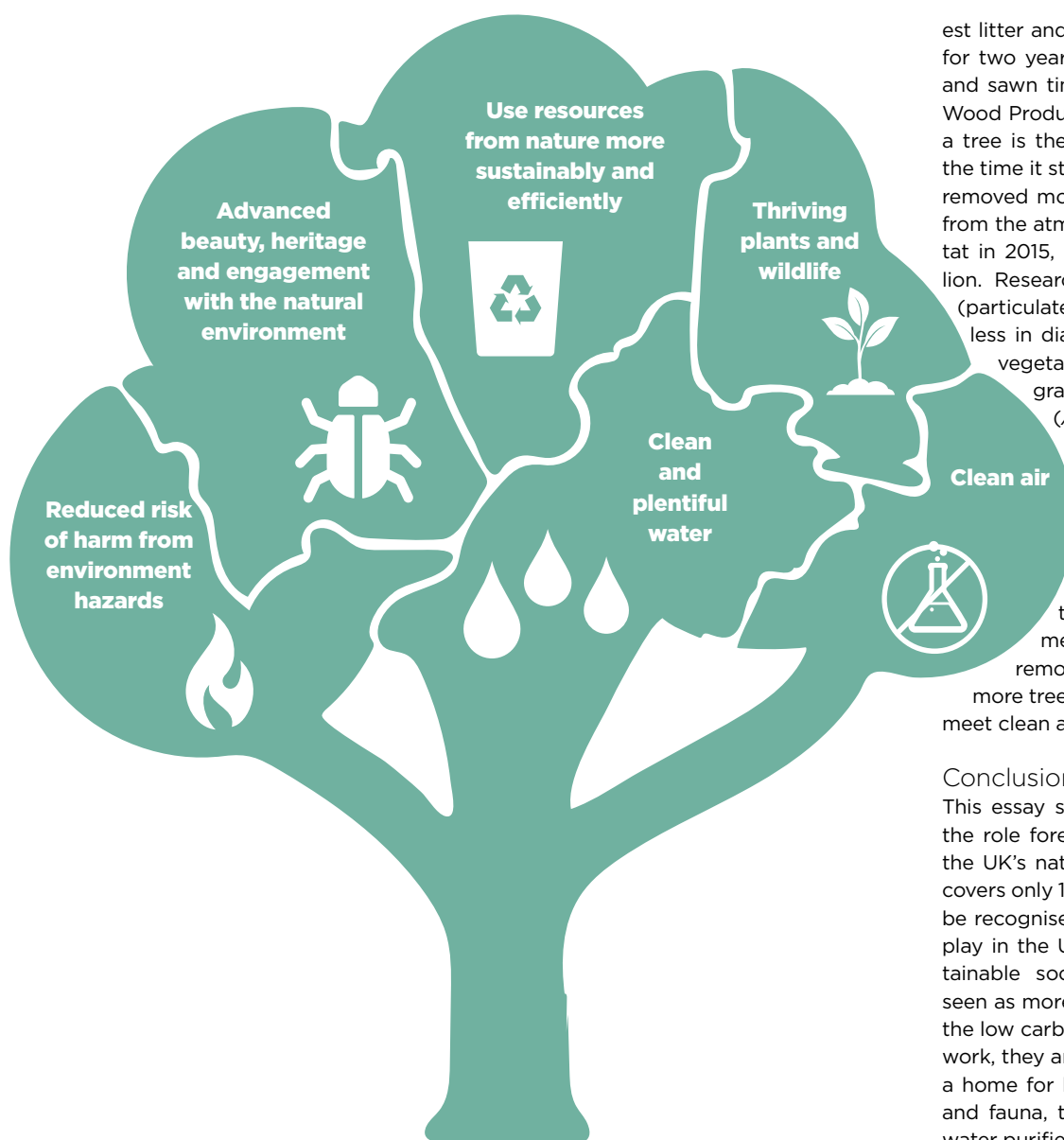
**Figure 1**
**Forestry Infographic: The graphic was designed to display some of the goals listed in the executive summary of the 25 Year Environment Plan to which forestry can contribute.**
*Source: (Authors Own, 2018)*

est litter and soils, it is locked up in paper for two years, particleboard for 25 years, and sawn timber for 35 years (Harvested Wood Products, 2018). The 'carbon life' of a tree is therefore extended well beyond the time it stands in the forest. Woodlands removed more harmful pollution and $CO_2$ from the atmosphere than any other habitat in 2015, which was valued at £1.8 billion. Research found that enough PM10 (particulate matter 10 micrometres or less in diameter) was captured from a vegetation matrix comprising 75% grassland, 20% sycamore maple (*Acer pseudoplatanus L.*) and 5% Douglas fir (*Pseudotsuga menziesii*) to prevent two deaths and two hospital admissions related to respiratory illness each year (Sinnet et al,. 2009). Whilst a study in the US found a total of 711,000 metric tons of air pollution is removed by urban trees. Planting more trees could be a viable solution to meet clean air standards (Nowak, 2006).

## Conclusion

This essay simply touches the surface of the role forestry could play in protecting the UK's natural resources. Forested land covers only 13% of UK land area but should be recognised for the pivotal role it could play in the UK's road to becoming a sustainable society. Woodlands should be seen as more than woodlands. Forests are the low carbon diesel used to commute to work, they are air filters, as strong as steel, a home for humans and a home for flora and fauna, they are soil remediators and water purifiers. Woodlands can provide resilience against climate change, they can help meet the goals of the 25 Year Environment Plan and they are fundamental to a Green Brexit.

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